

Weekly Meeting



25.05.2018

General comments on the period

May 8, 2018

ver. 1.5

Injector Accelerator Schedule 2018

Approved by Research board on 06.12.2017

20	21
14	Whitsun 21
Ded. Inj. MD 10 hrs 8 to 18	Ded. Inj. MD 10 hrs 8 to 18
Par. SPS MD 10 hrs 8 to 18	Par. SPS MD 10 hrs 8 to 18

Major COMPASS hardware problems on Friday May 18

To be done/repared:

- | | |
|------------------------------------|----------------------------|
| 1. RichWall | Gas flux DR02Y1 and DR02Y2 |
| 2. SciFi3 X | noise/inefficiency |
| 3. MWPC PS01 | 1 port |
| 4. Trigger – double peak in timing | LAST? |

To be addressed/open issues :

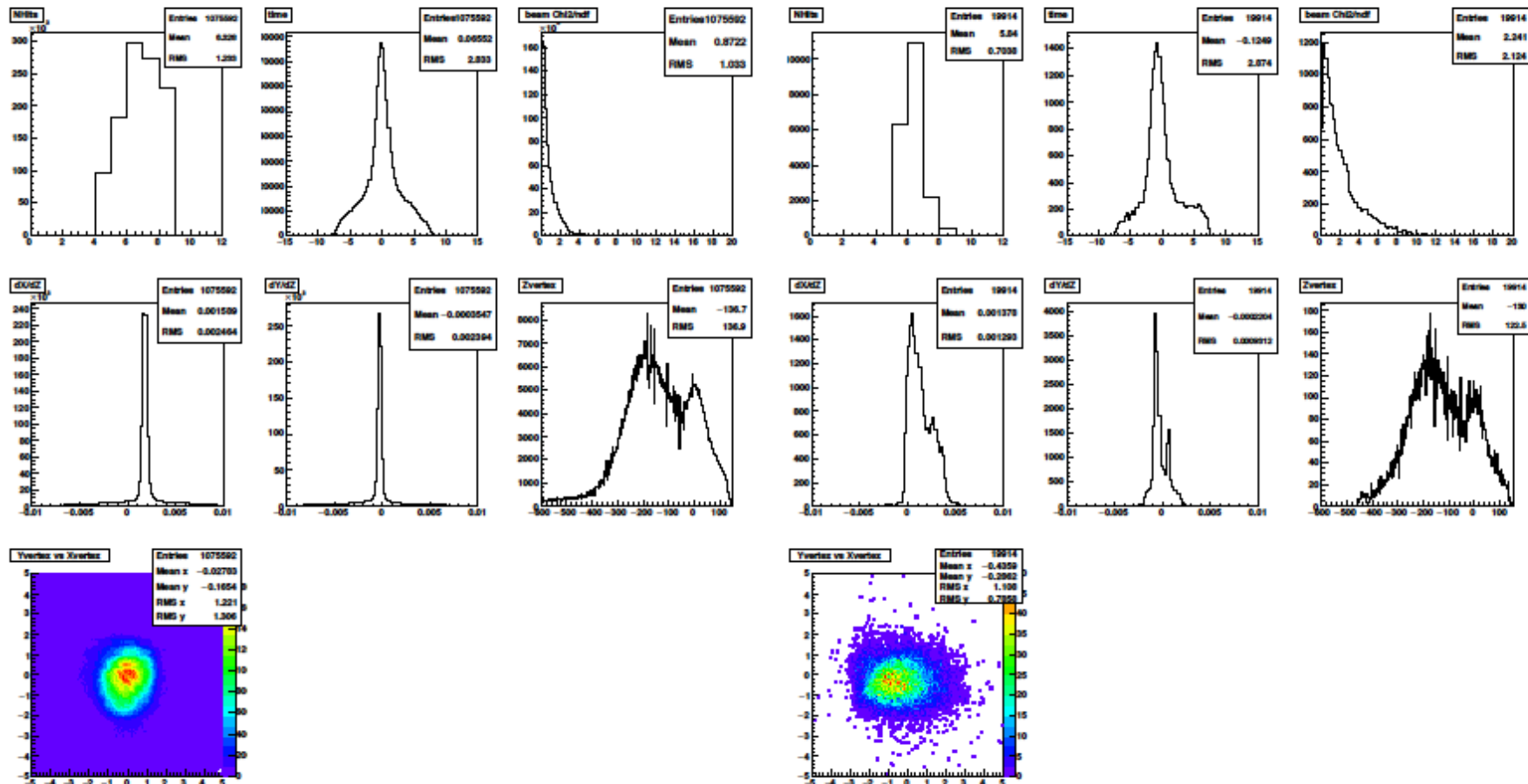
1. COOOL references for a number of detectors to be updated
2. Beam position/properties/intensity – to be measured
3. Radiation - network switches failure + DC/MM power supply – protection needed
4. Double timing peak in several detectors (LastxLast?)
5. J/Psi – number of J/Psi per run

Non COMPASS Failures:

CASTOR migration problem

Beam position/properties, veto inner hole size? Input from Catarina

Beam details: 2015 (left) vs 2018 (right)

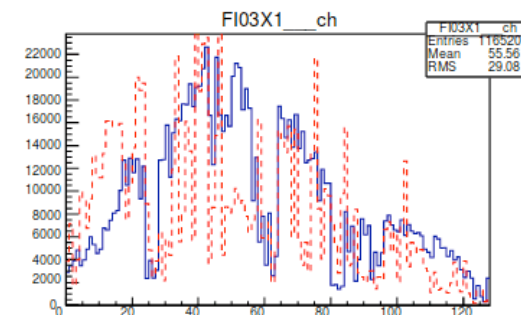
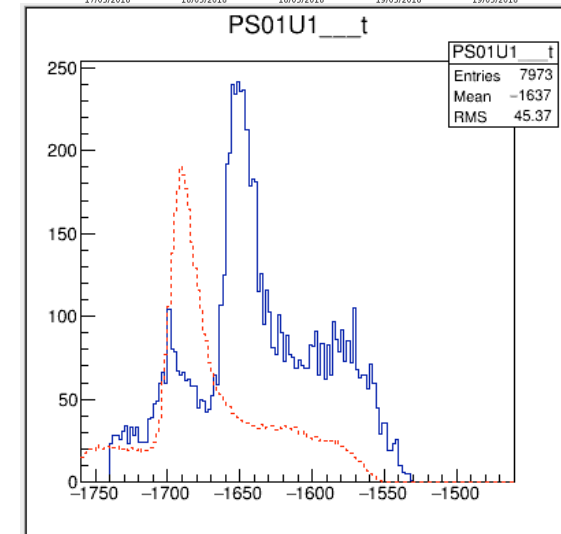
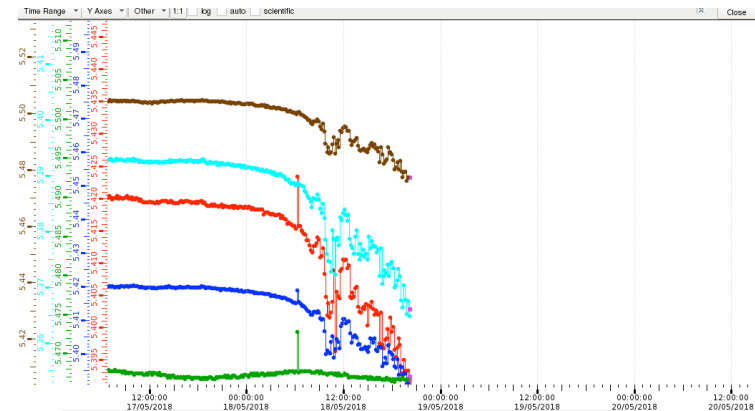


Day-by-day report 11:00 18/05 (Fr.) – 16:00 19/05 (Sa.)

Major problem – no major problems

Statistics, since Friday 18/05 11:00:
Drell-Yan data: ~4.500 spills

- 14:40 CASTOR seems restarted normal operation with no intervention on our side
- 20:30 DC05 LV power cycle as started to give errors, seems LV was drifting down starting morning time
- 23:40 Trigger timing? Double peak in several detectors, most probable Last-Last trigger generate it
- 01:10 Excess of events with 0 hits (SciFis etc) is noticed, the problem traced back to the increased rate of TRandom, which was not reflected in TCS window.
- 08:30 Inefficiency back on SCiFi03X
- ~10:00 DC05 f/e reload – Low Voltage is drifting a bit
- 16:00 Double timing peak investigation started Vincent



Day-by-day report 16:00 20/05 (Sa.) – 16:00 21/05 (Su.)

Major problem – no major problems

Statistics, over the past 24 hours:

Drell-Yan data: ~ 3.900 spills

00:00 – 08:00 - few trips on Straw:

St_HV_DI06_03U1_10mm_2, at 02:36 am

St_HV_DI05_03X2_10mm_3, at 04:33 am

St_HV_DI05_03X2_10mm_4, at 07:27 am

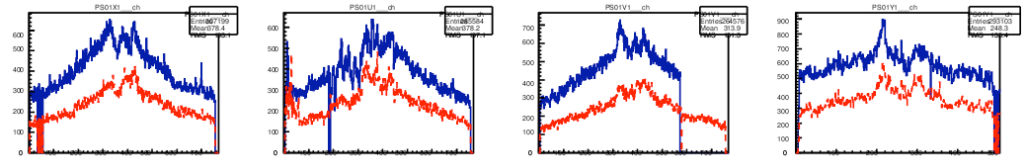
05:00 - DC04 reloaded

08:00 - PS01 – f/e port disabled – intervention to be planned to
Wednesday

14:00 - Orderly_shifts_plot clean up:

- removed BMS
- changed time scale for spill profile plots
- changed order of SciFis to reflect the setup of the beam telescope

14:20 - start to fill LN2 buffer Dewar



Day-by-day report 16:00 20/05 (Su.) – 16:00 21/05 (Mo.)

Major problem – MWPC/Straw etc VME
crate power supply

Statistics, over the past 24 hours:
Drell-Yan data: ~ 4.250 spills

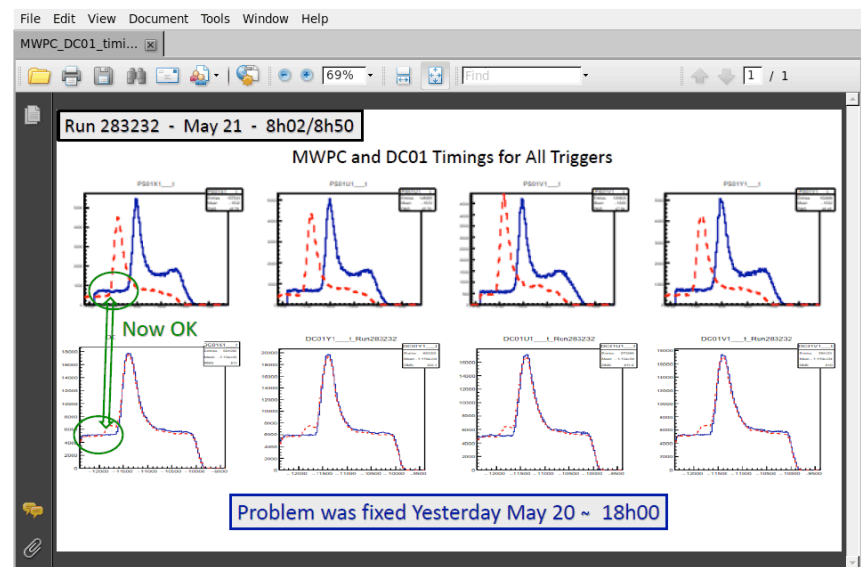
19:50 - Today, at ~17h30min, there was a power cut/glitch/spike in one
of the racks in the gallery.

02:50 - MM f/r reload - due to errors in MTV we reloaded 380 but it
failed -> reloading pccofe15 cured it

10:00 - Double peak in timing distributions disappeared yesterday
at around 18:00

12:30 - Electronic logbook problem – recommendation ?

15:50 - SciFi beam telescope – no data



Day-by-day report 16:00 21/05 (Mo.) – 16:00 22/05 (Tu.)

Major problem – SciFi beam telescope
HV power supply powercycle

Statistics, over the past 24 hours:
Drell-Yan data: ~ 3.850 spills

16:00 – 15h50min, the DCS lost the communication with CAEN HV
SY527 SCIFIJ_CCR1 (all SCIFIs HV). Power cycle helps

21:50 - New Noise on DW04U2 23:35 – noise is gone

10:30 - No beam 10:30-12:30 (no reason reported by SPS).

Analysis: J/Psi, Beam position/divergency, beam intensity,
double peak in timing

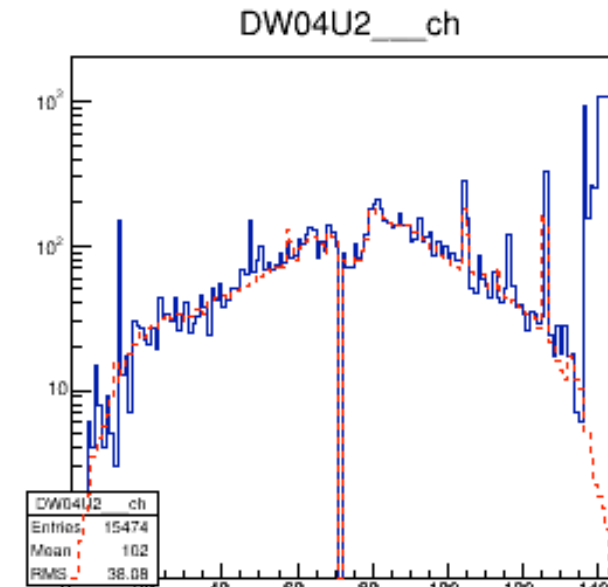
Tomorrow:

Polarization reversal + polarization – start at 08:00 ? Silvan – 9-10

MuonE – take out calorimeters

TPC evacuation from the area at 09-11

Interventions: Rich Wall, MWPC PS01, GEM pedestals,



Day-by-day report 16:00 22/05 (Tu.) – 16:00 23/05 (We.)

Major failures: DAQ, DC04 HV

Statistics, over the past 24 hours:

Drell-Yan data: ~ 2.026 spills

17:00-19:00 Detectors out of references: MA02X1, GEMS (noise)

22:00 - DAQ crashed, many detectors in red in MTV, restart at ~23:40

02:40 - DC04 HV trip, - No convincing indication that it's anything but a glitch in the electronics of the supply mainframe.....

Conclusions:

- It's probably an effect on the high radiation rate. Protection?

Data taking resumed at 03:40

Today – activity in the area:

1. Polarization reversal + polarization:

The polarizations are measured as -71.8% in the upstream and +71.7 % in the downstream.

The relaxation times since 16/05 17:00 are 1300 h and 1500 h.

2. DAQ - Info about Target is filled for each run now

- Upstream cell polarization

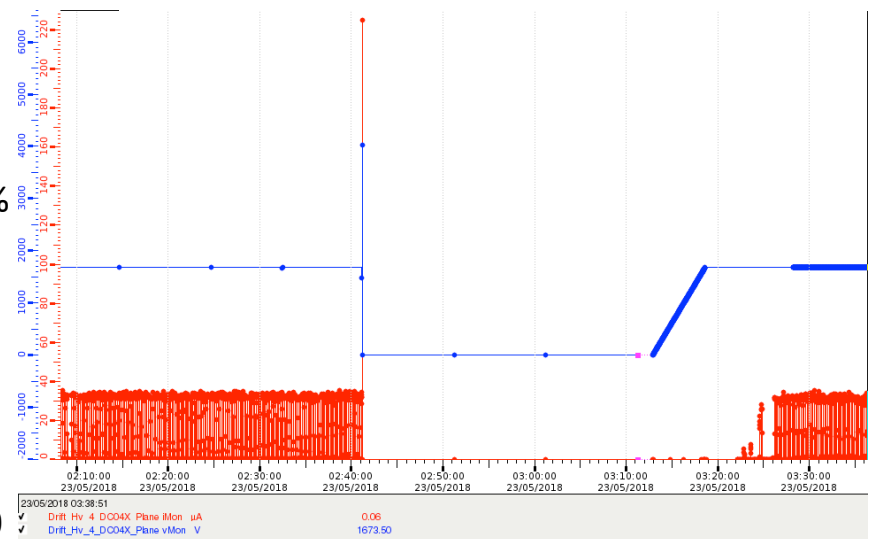
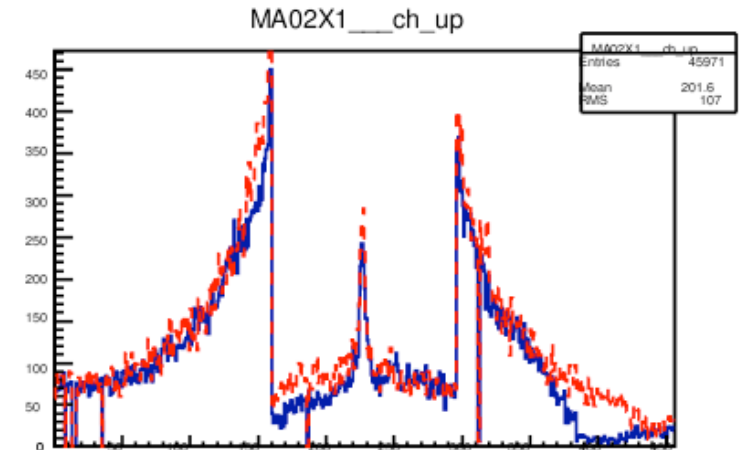
- Downstream cell polarization

- Target solenoid and dipole current, ION2 chamber is also in

3. MuonE – take out calorimeters – calorimeter was removed at 09:30

4. TPC evacuation from the area at 09-11 - Done

5. Interventions: Rich Wall – gas flux improved, Gessica substituted, MWPC PS01 is OK now, GEM pedestals taken



Day-by-day report 16:00 22/05 (Tu.) – 16:00 23/05 (We.)

Today – activity in the area (continued):

6. Trigger (LAST) - Few channels of the H1 hodoscope had no proper connection to the GANDALF matrix board most probably since 1,5 weeks. The connection was bad at the discriminator board (ECL output), this could not be seen on the cool histogram. It resulted in low rate and bad timing (-> no coincidences) on these channels and in one case in no connection at all.
7. 12:20 - SM1 is not going to the nominal value -2.500A, CCC is informed, it occurred to be a planned intervention
8. 14:20 - ECAL2 Problem with LED source was fixed

Day-by-day report 16:00 23/05 (We.) – 16:00 24/05 (Th.)

Major failures: PS septum, SM1, Polarised Target, PPE211

Statistics, over the past 24 hours: Drell-Yan data: 0 spills

18:14 The problem with SM1 power supply (all 3 blowers broken) cannot be repaired today, tomorrow morning an expert will come to fix it. Starting 11:00 is on again

18:50 PPE211: one door is not locking correctly. Lock was exchanged at ~23:30

23:23 Target problem with micro-wave of downstream cell - depolarizing

01:26 Beam Septum fault At 1:03, the beam disappeared (basically as soon as we were authorised to switch the beam on):

No beam from PS, septum fault. No beam before 17:00

10:20 Target going to dipole field about 0.6 T Rotate field from 2.5 T solenoid to dipole 0.6 T (as in 2015) to melt ice on upstream magnet turret.

Yuri is replacing and testing burned 70 GHz (4 mm band) microwave circulator for upstream target cell. The circulator prevents reflected power to go back to the EIO tube.

It was found that the mw frequency regulator was broken as well.

15:30 Start to polarise with manual tuning of mw frequency, limited possibility to tune mw power.

14:00 GEM GEM and PGEM pedestals taken and loaded

Day-by-day report 16:00 24/05 (Th.) – 11:00 25/05 (Fr.)

Major failures: no major failures, PT - polarising

Statistics, over the past 24 hours: Drell-Yan data: 0 spills

~ 18:00 Beam is back

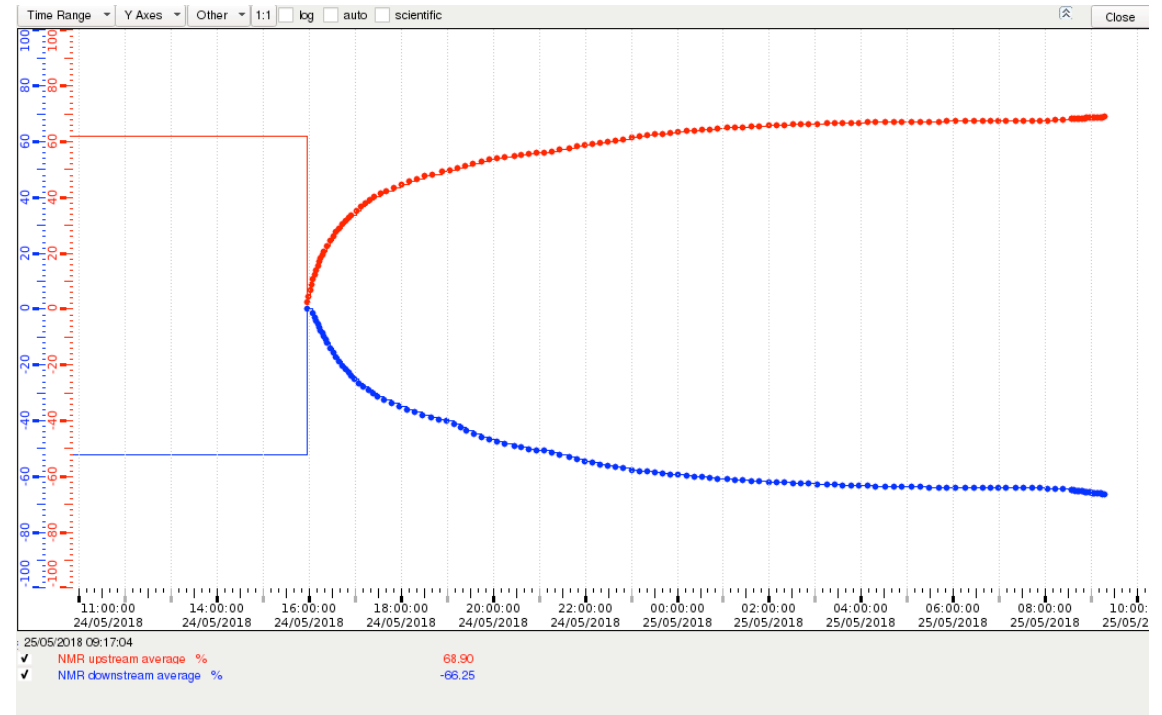
18:30 Start to take alignment data

19:00 Start to collect data for alignment Sol ON, SM1&SM2 ON

21:37 Sol ON, SM1&SM2 OFF

00:30 Data taking with muon beam for trigger efficiency study

08:15 MW frequency/power tuned – polarization grows faster (no tuning over the night)



Major COMPASS hardware problems on Friday May 18 / Current status

To be done/repared:

- | | | |
|------------------------------------|----------------------------|--------------------------|
| 1. RichWall | Gas flux DR02Y1 and DR02Y2 | / (+/-, Gas is OK, F/E?) |
| 2. SciFi3 X | noise/inefficiency | / (+) |
| 3. MWPC PS01 | 1 port | / (+) |
| 4. Trigger – double peak in timing | LAST? | / (+) |

To be addressed/open issues :

- | | |
|--|---------|
| 1. COOOL references for a number of detectors to be updated | / (+/-) |
| 2. Beam position/properties/intensity – to be measured | / (-) |
| 3. Radiation - network switches failure + DC/MM power supply – protection needed | / (?) |
| 4. Double timing peak in several detectors (LastxLast?) | / (+) |
| 5. J/Psi – number of J/Psi per run | / (+/-) |

Non COMPASS Failures: **Septum failure (PS), PPE211**

**THANKS A LOT TO EVERYBODY AND GOOD LACK
TO THE NEXT WEEK COORDINATOR
Catarina**

If you want buffet service running – pay money!